Color Monitor

IBM

P77

Operating Instructions ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯ **English**

Edition 1

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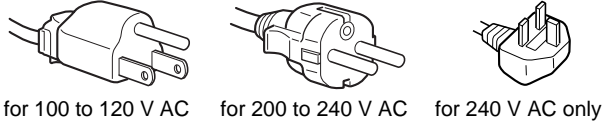
Table of Contents

Precautions

Warning on power connections

• Use the supplied power cord. If you use a different power cord, be sure that it is compatible with your local power supply.

Example of plug types

for 100 to 120 V AC   for 200 to 240 V AC   for 240 V AC only

• Before disconnecting the power cord, wait at least 30 seconds after turning off the power to allow the static electricity on the screen's surface to discharge.
• After the power is turned on, the screen is demagnetized (degaussed) for about 5 seconds. This generates a strong magnetic field around the screen which may affect data stored on magnetic tapes and disks placed near the monitor. Be sure to keep magnetic recording equipment, tapes, and disks away from the monitor.

> The equipment should be installed near an easily accessible outlet.

Installation

Do not install the monitor in the following places:
• on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies, etc.) that may block the ventilation holes
• near heat sources such as radiators or air ducts, or in a place subject to direct sunlight
• in a place subject to severe temperature changes
• in a place subject to mechanical vibration or shock
• on an unstable surface
• near equipment which generates magnetism, such as a transformer or high voltage power lines
• near or on an magnetically charged metal surface
• in a dusty or smoky environment
• into a wall or enclosure
• in a small space that does not allow adequate ventilation around the top, bottom, and sides of the monitor that may block the ventilation holes.

Protection

• Do not put foreign objects into the monitor.
• Disconnect the monitor if environment exceeds 60ºC/140ºF.
• Ensure AC power cord is not trapped under furniture, TV, etc.
• Do not overload wall outlets, extension cords, or convenience receptacles beyond their capacity.

Maintenance

• Clean the screen with a soft cloth. If you use a glass cleaning liquid, do not use any type of cleaner containing an anti-static solution or similar additive as this may scratch the screen's coating.
• Do not rub, touch, or tap the surface of the screen with sharp or abrasive items such as a ballpoint pen or screwdriver. This type of contact may result in a scratched picture tube.
• Clean the cabinet, panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent, such as alcohol or benzene.

Transportation

When you transport this monitor for repair or shipment, use the original carton and packing materials.

Use of the tilt-swivel

This monitor can be adjusted within the angles shown below. To find the center of the monitor's turning radius, align the center of the monitor's screen with the centering line on the stand.
Hold the monitor at the bottom with both hands when you turn it horizontally or vertically. Be careful not to pinch your fingers at the back of the monitor when you tilt the monitor up vertically.

2
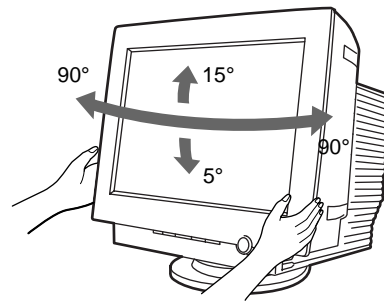
Identifying parts and controls

See the pages in parentheses for further details.

Front
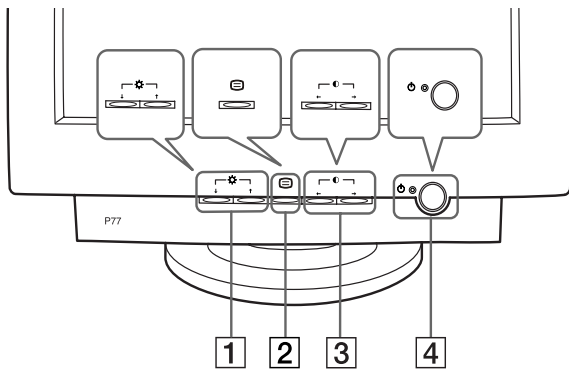
1 ☼ ↓ **and ↑ buttons (pages 6, 7)**
These buttons display the BRIGHTNESS/CONTRAST menu. These buttons are also used to navigate the menu and to make adjustments to the selected MAIN items.

2 ▭ **button (page 6)**
The ▭ button is used to display the main MENU on your screen.

3 ◐ ← **and → buttons (page 7)**
These buttons display the BRIGHTNESS/CONTRAST menu. These buttons are also used to make adjustments to the selected menu item.

4 ⏻ **(power) button and indicator (pages 4, 10, 13)**
This button turns the monitor on and off. The power indicator lights up in green when the monitor is turned on and lights up in amber when the monitor is in power saving mode.

Rear
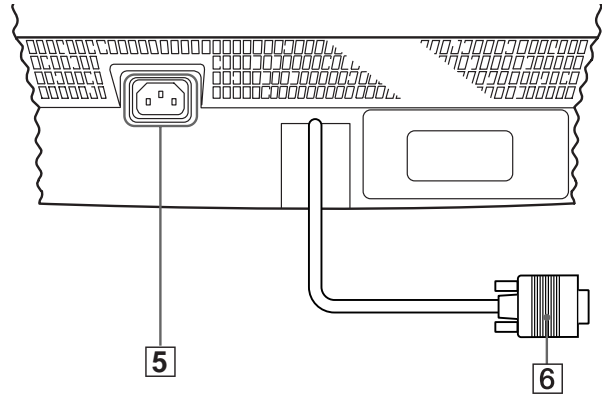
5 **AC input connector (pages 2, 4, 13)**
This connector provides AC power to the monitor.

6 **Video input connector (HD15) (page 4)**
This connector inputs RGB video signals (0.700 Vp-p, positive) and sync signals.
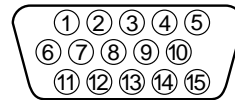
Pin No.	Signal
1	Red
2	Green (Sync on Green)
3	Blue
4	ID (Ground)
5	DDC Ground*
6	Red Ground
7	Green Ground
8	Blue Ground
9	DDC Host 5 V*
10	Ground
11	ID (Ground)
12	Bi-Directional Data (SDA)*
13	H. Sync
14	V. Sync
15	Data Clock (SCL)*

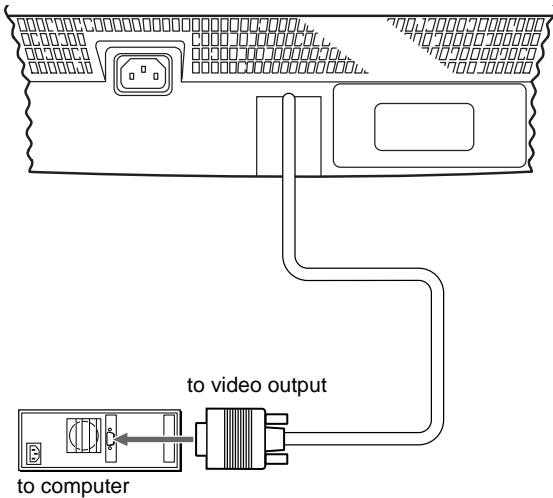* DDC (Display Data Channel) is a standard of VESA.

3

Setup

This monitor works with platforms running at horizontal frequencies between 30 and 94 kHz

Step 1: Connect your monitor to your computer

Turn off the monitor and computer before connecting.

Note
Do not touch the pins of the video cable connector as this might bend the pins.

to video output

to computer

Step 2: Connect the power cord

With the monitor and computer turned off, first connect the power cord to the monitor, then connect it to a properly grounded power outlet.

to AC IN

to a power outlet

power cord (supplied)
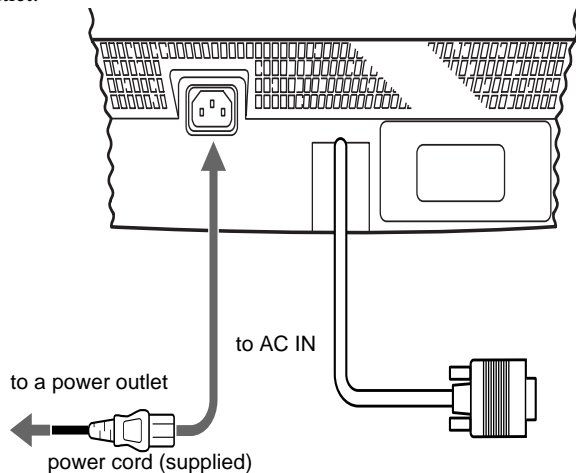
Step 3: Turn on the monitor and computer

First turn on the monitor, then turn on the computer.
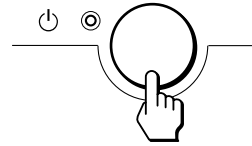
The installation of your monitor is complete.
If necessary, use the monitor's controls to adjust the picture.

If no picture appears on your screen

- Check that the monitor is correctly connected to the computer.
- If CHECK SIGNAL CABLE appears on the screen, check the input signal connection, and confirm that your computer's graphic board is completely seated in the correct bus slot.
- If you are replacing an old monitor with this model and OUT OF SCAN RANGE appears on the screen, reconnect the old monitor. Then adjust the computer's graphic board so that the horizontal frequency is between 30 – 94 kHz, and the vertical frequency is between 48 – 170 Hz.

For more information about the on-screen messages, see "Trouble symptoms and remedies" on page 11.

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Workplace Preparation

Positioning the Monitor

Choose a suitable place to position the monitor where it is not near fluorescent desk lighting or any equipment that produces magnetic fields that could cause interference.
Ensure that the furniture or equipment can support the weight of the monitor. Allow at least 2 inches (50mm) ventilation space around the monitor.

Height

The monitor should be positioned so that the top of the screen is slightly below your eye level when you sit at your workstation.

Orientation

Choose a position that gives the least reflection from lights and windows, usually at a right angle to any windows. The monitor should be positioned directly in front of you so that you do not have to twist your body. Tilt the monitor to a comfortable viewing angle.

Working Practices

Rest

Take regular breaks. Vary your posture, and stand up and stretch occasionally as prolonged use of computer workstations can be tiring.

Back

You should sit back in the chair and use the backrest.

Hands

Use a light touch on the keyboard, keeping your hands and fingers relaxed. Allow a space in front of the keyboard to rest your wrists when not typing. Consider using a wristpad.

Eyesight

Working with monitors, in common with any kind of prolonged close work, can be visually demanding. Look away from the screen periodically and have your eyesight checked regularly.

Screen settings

Set the screen brightness and contrast to a comfortable level. You may have to adjust this as the lighting changes during the day. Many application programs let you select color combinations which can help you to view in comfort.

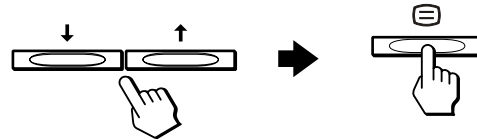# Selecting the on-screen menu language (LANGUAGE)

English, French, German, Spanish, Italian, Dutch, Swedish, Russian and Japanese versions of the on-screen menus are available. The default setting is English.
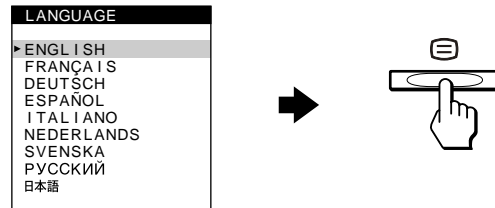
1 Press the ⊟ button.
See page 6 for more information on using the ⊟ button.


```
MENU                    OK → ▢
      EXIT
⊟     SIZE/CENTER
⏳     GEOMETRY
      COLOR
⊞     CONVERGENCE
🅰     LANGUAGE
🗄     OPTION
```
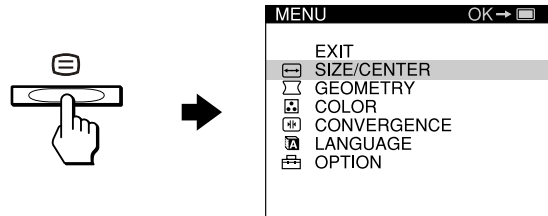
2 Press the ↓ or ↑ button to highlight 🅰 LANGUAGE and press the ⊟ button.

3 Press the ↓ or ↑ button to select a language.

```
LANGUAGE
▸ ENGLISH
  FRANÇAIS
  DEUTSCH
  ESPAÑOL
  ITALIANO
  NEDERLANDS
  SVENSKA
  РУССКИЙ
  日本語
```

To close the menu
Press the ⊟ button once to return to the main MENU, and twice to return to normal viewing. If no buttons are pressed, the menu closes automatically after about 30 seconds.
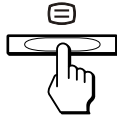
5

Customizing Your Monitor

You can make numerous adjustments to your monitor using the on-screen menu.

Navigating the menu

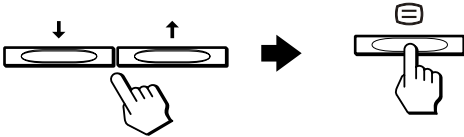### ■ Using the ⊟ , ↓ / ↑ and ← / → buttons

1 Display the main MENU.
Press the ⊟ button to display the main MENU on your screen.
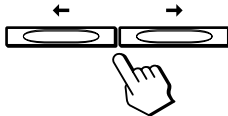

2 Select the menu you want to adjust.
To highlight the desired menu item, press the ↑ button to go up and press the ↓ button to go down. Press the ⊟ button to select the desired menu.
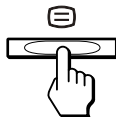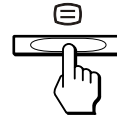

3 Adjust the menu.
Press the ← or → button to make the adjustment.

4 Close the menu.
Press the ⊟ button once to return to the main MENU, and twice to return to normal viewing. If no buttons are pressed, the menu closes automatically after about 30 seconds.

■ Menu Items
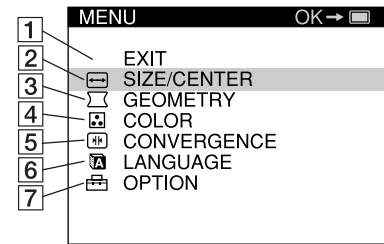
Press the ↓/↑ buttons to highlight one of the following menus, then press the ⊟ buttton to select the menu.

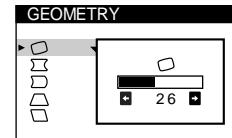**1 EXIT**
Close the menu.

2 SIZE/CENTER (page 7)
Adjusts the picture's size, centering, or zoom.
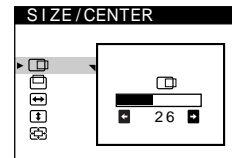
3 GEOMETRY (page 8)
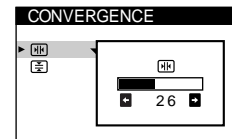Adjusts the picture's rotation and shape.

4 COLOR (page 8)
Adjusts the picture's color temperature. You can use this to match the monitor's colors to a printed picture's colors.

5 CONVERGENCE (page 8)
Adjusts the picture's horizontal and vertical convergence.
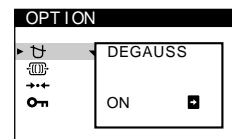
6 LANGUAGE (page 8)
Selects the on-screen menu's language.
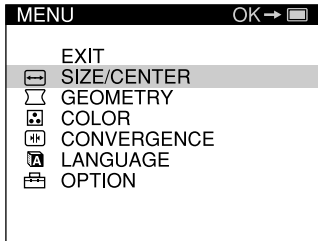
7 OPTION (page 9)
Adjusts the monitor's options. The options include:
• degaussing the screen
• adjusting the moire cancellation level
• resetting to factory settings
• locking the controls

6

■ Displaying the input signal

The horizontal and vertical frequencies of the input signal are displayed in the main MENU. If the signal matches to one of the recommended VESA timing modes, the resolution is also displayed.

```
MENU                  OK → ▣
        EXIT
   ⬌    SIZE/CENTER
   ⬚    GEOMETRY
   ▦    COLOR
   ⊞    CONVERGENCE
   🄰    LANGUAGE
   ▥    OPTION
```

the resolution of the input signal

60.0kHz / 75Hz
1024×768

the horizontal and vertical frequencies of the input signal

Adjusting the brightness and contrast

Brightness and contrast adjustments are made using a separate BRIGHTNESS/CONTRAST menu.

1   Press the ↓ , ↑ , ← , or → button.
The BRIGHTNESS/CONTRAST menu appears on the screen.

```
BRIGHTNESS / CONTRAST

        ☼              ◑
   ⬇  26  ⬆     ⬅  26  ➡
```
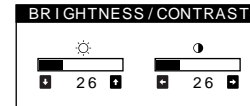
2   Press the ↓ or ↑ button to adjust the brightness (☼), and the ← or → button to adjust the contrast (◑).
If no adjustments are made, the menu disappears automatically after about 3 seconds.

# Adjusting the size and the centering of the picture (SIZE/CENTER)

1   Press the ▭ button.
The main MENU appears on the screen.

2   Press the ↓ or ↑ button to highlight ⬌ SIZE/CENTER and press the ▭ button.
The SIZE/CENTER menu appears on the screen.

3   First press the ↓ or ↑ button to select the desired adjustment item. Then press the ← or → button to adjust the setting.

| Select	To
⬌	shift the picture to the left or right
⬒	shift the picture up or down
⬌	enlarge or reduce the picture width
↨	enlarge or reduce the picture height
⊡	enlarge or reduce the picture width and height proportionally

Note
Adjustment stops when either the horizontal or vertical size reaches its maximum or minimum value.

7

Adjusting the shape of the picture (GEOMETRY)

The GEOMETRY settings allow you to adjust the rotation and shape of the picture.

1 **Press the ⊜ button.**
The main MENU appears on the screen.

2 **Press the ↓ or ↑ button to highlight ⬭ GEOMETRY and press the ⊜ button.**
The GEOMETRY menu appears on the screen.

3 **First press the ↓ or ↑ button to select the desired adjustment item. Then press the ← or → button to adjust the setting.**

Select	To
⬭	rotate the picture
⬚	expand or contract the picture sides
⬭	shift the picture sides to the left or right
⬭	adjust the picture width at the top or bottom of the screen
⬭	shift the picture to the left or right at the top or bottom of the screen

Adjusting the color of the picture (COLOR)

The COLOR settings allow you to adjust the picture's color temperature by changing the color level of the white color field. Colors appear reddish if the temperature is low, and bluish if the temperature is high. This adjustment is useful for matching the monitor's colors to a printed picture's colors.
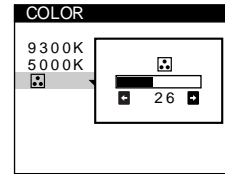
1 **Press the ⊜ button.**
The main MENU appears on the screen.

2 **Press the ↓ or ↑ button to highlight ▦ COLOR and press the ⊜ button.**
The COLOR menu appears on the screen.

3 **Press the ↓ or ↑ button to select a color temperature.**
The preset color temperatures are 5000K and 9300K. Since the default setting is 9300K, the whites will change from a bluish hue to a reddish hue as the temperature is lowered to 5000K.

4 **If necessary, fine tune the color temperature.**
You can select your own color temperature between 9300K and 5000K.
First press the ↓ or ↑ button to select ⬚ . Then press the ← or → button to adjust the color temperature.

```
COLOR

9300K
5000K
⬚           ▦
            ← 2 6 →
```

Adjusting the convergence (CONVERGENCE)

The CONVERGENCE settings allow you to adjust the quality of the picture by controlling the convergence. The convergence refers to the alignment of the red, green, and blue color signals. If you see red or blue shadows around letters or lines, adjust the convergence.

1 **Press the ⊜ button.**
The main MENU appears on the screen.

2 **Press the ↓ or ↑ button to highlight ▦ CONVERGENCE and press the ⊜ button.**
The CONVERGENCE menu appears on the screen.

3 **First press the ↓ or ↑ button to select ▦ for horizontal adjustment, or ▦ for vertical adjustment. Then press the ← or → button to adjust the convergence.**

Selecting the on-screen menu language (LANGUAGE)

English, French, German, Spanish, Italian, Dutch, Swedish, Russian and Japanese versions of the on-screen menus are available. The default setting is English.

1 **Press the ⊜ button.**
The main MENU appears on the screen.

2 **Press the ↓ or ↑ button to highlight ▧ LANGUAGE and press the ⊜ button.**
The LANGUAGE menu appears on the screen.

3 **Press the ↓ or ↑ button to select a language.**

```
LANGUAGE

▶ENGLISH
 FRANÇAIS
 DEUTSCH
 ESPAÑOL
 ITALIANO
 NEDERLANDS
 SVENSKA
 РУССКИЙ
 日本語
```

8

Additional settings (OPTION)

You can manually degauss (demagnetize) the monitor, adjust the moire cancellation level, reset to factory setting, and lock the controls.

1 Press the ▤ button.
The main MENU appears on the screen.

2 Press the ↓ or ↑ button to highlight ⊞ OPTION and press the ▤ button.
The OPTION menu appears on the screen.

3 Press the ↓ or ↑ button to select the desired adjustment item.
Adjust the selected item according to the following instructions.

Degaussing the screen

The monitor is automatically demagnetized (degaussed) when the power is turned on.
To manually degauss the monitor, first Press the ↓ or ↑ button to select ⎍ (DEGAUSS). Then press the ➡ button.
The screen is degaussed for about 5 seconds. If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result.

Adjusting the moire*

If elliptical or wavy patterns appear on the screen, adjust the moire cancellation level.
To adjust the amount of moire cancellation, first press the ↓ or ↑ button to select ▦ (MOIRE ADJUST). Then press the ⬅ or ➡ button until the moire effect is at a minimum.

* Moire is a type of natural interference which produces soft, wavy lines on your screen. It may appear due to interference between the pattern of the picture on the screen and the phosphor pitch pattern of the monitor.

Example of moire
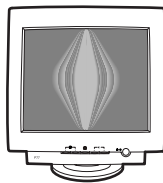
Resetting the adjustment

The RESET option erases your customized settings.
To restore your monitor to the factory settings, first press the ↓ or ↑ button to select ⇥⇤ (RESET). Then press the ➡ button to reset the adjustment for current input signal. Press the ➡ button for 2 seconds to reset the adjustment for all input signals.

Note

When "reset the adjustment for all input signal" is activated, the customized language selection goes back to the default language of English.

Locking the controls

To protect adjustment data by locking the controls, first press the ↓ or ↑ button to select ⊶ (CONTROL LOCK). Then press the ➡ button to select ON.
Only the ⏻ (power) button, EXIT, and ⊶ (CONTROL LOCK) of the ⊞ OPTION menu will operate. If any other items are selected, the ⊶ mark appears on the screen.

To cancel the control lock

Repeat the procedure above and set ⊶ (CONTROL LOCK) to OFF.

9

Technical Features

Preset and user modes

When the monitor receives an input signal, it automatically matches the signal to one of the factory preset modes stored in the monitor's memory to provide a high quality picture at the center of the screen. (See Appendix for a list of the factory preset modes.) For input signals that do not match one of the factory preset modes, the digital Multiscan technology of this monitor ensures that a clear picture appears on the screen for any timing in the monitor's frequency range (horizontal: 30 – 94 kHz, vertical: 48 – 170 Hz). If the picture is adjusted, the adjustment data is stored as a user mode and automatically recalled whenever the same input signal is received.

Note for Windows users

For Windows users, check your video board manual or the utility program which comes with your graphic board and select the highest available refresh rate to maximize monitor performance.

Power saving function

This monitor meets the power-saving guidelines set by VESA and ENERGY STAR. If no signal is received by the monitor from the connected computer, the monitor will automatically reduce power consumption as shown below.

Power mode	Power consumption	⏻ (power) indicator
normal operation	≤ 105 W	green
active off*	≤ 3 W	amber**
power off	0 W (Approx.)	off

*   When your computer is in active off mode, ACTIVATE USING PC appears on the screen if you press any button on the monitor. After a few seconds, the monitor enters the power saving mode again.

** If the horizontal or vertical sync signal is received by the monitor, the power indicator lights in amber.

Troubleshooting

Before contacting technical support, refer to this section.

If thin lines appear on your screen (damper wires)

The lines you are experiencing on your screen are normal for the Trinitron monitor and are not a malfunction. These are shadows from the damper wires used to stabilize the aperture grille and are most noticeable when the screen's background is light (usually white). The aperture grille is the essential element that makes a Trinitron picture tube unique by allowing more light to reach the screen, resulting in a brighter, more detailed picture.

Damper wires
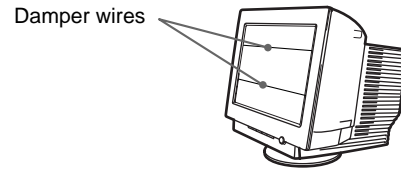
On-screen messages

If no picture appears on the screen, one of the following messages appears on the screen. To solve the problem, see "Trouble symptoms and remedies" on page 11.

Example

```
INFORMATION

MONITOR IS WORKING

OUT OF SCAN RANGE
CHANGE PC SETTING
```
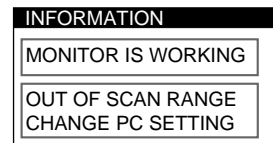
The input signal condition
OUT OF SCAN RANGE
indicates that the input signal is not supported by the monitor's specifications.
CHECK SIGNAL CABLE
indicates that no input signal is present.

10

Trouble symptoms and remedies

If the problem is caused by the connected computer or other equipment, please refer to the connected equipment's instruction manual. Use the self-diagnosis function (page 13) if the following recommendations do not resolve the problem.

Symptom	Check these items
No picture	
If the ⏻ (power) indicator is not lit	• Check that the power cord is properly connected. • Check that the ⏻ (power) button is in the "on" position.
If the CHECK SIGNAL CABLE message appears on the screen, or if the ⏻ (power) indicator is amber	• Check that the video signal cable is properly connected and all plugs are firmly seated in their sockets (page 4). • Check that the HD15 video input connector's pins are not bent or pushed in. ■**Problems caused by the connected computer or other equipment** • Check that the computer's power is "on." • Check that the graphic board is completely seated in the proper bus slot.
If the OUT OF SCAN RANGE message appears on the screen	■**Problems caused by the connected computer or other equipment** • Check that the video frequency range is within that specified for the monitor. If you replaced an old monitor with this monitor, reconnect the old monitor and adjust the frequency range to the following. Horizontal: 30 – 94 kHz Vertical: 48 – 170 Hz
If no message is displayed and the ⏻ (power) indicator is green or flashing amber	• Use the Self-diagnosis function (page 13).
Picture flickers, bounces, oscillates, or is scrambled	• Isolate and eliminate any potential sources of electric or magnetic fields such as other monitors, laser printers, electric fans, fluorescent lighting, or televisions. • Move the monitor away from power lines or place a magnetic shield near the monitor. • Try plugging the monitor into a different AC power outlet, preferably on a different circuit. • Try turning the monitor 90° to the left or right. ■**Problems caused by the connected computer or other equipment** • Check your graphics board manual for the proper monitor setting. • Confirm that the graphics mode and the frequency of the input signal are supported by this monitor (Appendix). Even if the frequency is within the proper range, some video boards may have a sync pulse that is too narrow for the monitor to sync correctly. • Adjust the computer's refresh rate (vertical frequency) to obtain the best possible picture.
Picture is fuzzy	• Adjust the brightness and contrast (page 7). • Degauss the monitor* (page 9). • Select MOIRE ADJUST and adjust the moire cancellation effect (page 9).
Picture is ghosting	• Eliminate the use of video cable extensions and/or video switch boxes. • Check that all plugs are firmly seated in their sockets.
Picture is not centered or sized properly	• Adjust the size (page 7) or centering (page 7). Note that some video modes do not fill the screen to the edges.
Edges of the image are curved	• Adjust the geometry (page 8).
Wavy or elliptical pattern (moire) is visible	• Select MOIRE ADJUST and adjust the moire cancellation effect (page 9). ■**Problems caused by the connected computer or other equipment** • Change your desktop pattern.
Color is not uniform	• Degauss the monitor* (page 9). If you place equipment that generates a magnetic field, such as a speaker, near the monitor, or if you change the direction the monitor faces, color may lose uniformity.
White does not look white	• Adjust the color temperature (page 8).

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Symptom	Check these items
Letters and lines show red or blue shadows at the edges	• Adjust the convergence (page 8).
Monitor buttons do not operate	• If the control lock is set to ON, set it to OFF (page 9).
A hum is heard right after the power is turned on	• This is the sound of the auto-degauss cycle. When the power is turned on, the monitor is automatically degaussed for five seconds.

* If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result. A humming noise may be heard, but this is not a malfunction.

Displaying this monitor's name, serial number, and date of manufacture.

While the monitor is receiving a video signal, press and hold the ⊜ button for more than five seconds to display this monitor's information box.

Example


```
INFORMATION
MODEL : IBM-P77
SER  NO:12-34567
MANUFACTURED:2001-05
```

If the problem persists, call your authorized technical support and give the following information.
• Model name: P77
• Serial number
• Name and specifications of your computer and graphics board.

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Self-diagnosis function

This monitor is equipped with a self-diagnosis function. If there is a problem with your monitor or computer, the screen will go blank and the ⏻ (power) indicator will either light up green or flash amber. If the ⏻ (power) indicator is lit in amber, the computer is in power saving mode. Try pressing any key on the keyboard.
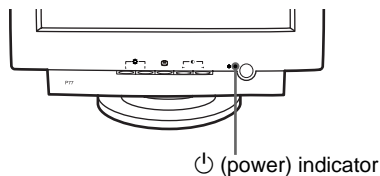
⏻ (power) indicator

If the screen is blank and the ⏻ (power) indicator is green

1 **Disconnect the video input cable or turn off the connected computer.**

2 **Press the ⏻ (power) button twice to turn the monitor off and then on.**

3 **Press the ➡ button for 2 seconds.**

If the monitor information and all four color bars appear (white, red, green, blue), the monitor is working properly. Reconnect the video input cable and check the condition of your computer.

If the color bars do not appear, there is a potential monitor failure. Inform your authorized technical support of the monitor's condition.

If the ⏻ (power) indicator is flashing amber

Press the ⏻ (power) button twice to turn the monitor off and then on.
If the ⏻ (power) indicator lights up green, the monitor is working properly.
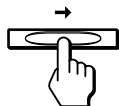
If the ⏻ (power) indicator is still flashing, there is a potential monitor failure. Count the number of seconds between amber flashes of the ⏻ (power) indicator and inform your authorized technical support of the monitor's condition. Be sure to note the model name and serial number of your monitor. Also note the make and model of your computer and video board.

Specifications

CRT	0.24 mm aperture grille pitch (center) 17 inches measured diagonally 90-degree deflection Trinitron
Viewable image size	Approx. 326.7×242.5 mm (w/h) ($12\,^7/_8 \times 9\,^5/_8$ inches)
Viewing image	Approx. 406.4 mm (16.0 inches)

Resolution

Maximum	Horizontal: 1600 dots Vertical: 1200 lines
Recommended	Horizontal: 1024 dots Vertical: 768 lines
Standard image area	Approx. 312×234 mm (w/h) ($12\,^3/_8 \times 9\,^1/_4$ inches)
Deflection frequency*	Horizontal: 30 to 94 kHz Vertical: 48 to 170 Hz
AC input voltage/current	100 to 240 V, 50-60 Hz, Max. 1.7 A
Power consumption	Approx. 105 W
Dimensions	Approx. $414 \times 418 \times 428$ mm (w/h/d) ($16\,^1/_4 \times 16\,^1/_2 \times 16\,^7/_8$ inches)
Mass	Approx. 19 kg (41.9 lb)
Plug and Play	DDC2B/DDC2Bi GTF**

* Recommended horizontal and vertical timing condition
  • Horizontal sync width should be more than 1.0 μsec.
  • Horizontal blanking width should be more than 3.0 μsec.
  • Vertical blanking width should be more than 500 μsec.

Design and specifications are subject to change without notice.

Preset mode timing table

No.	Resolution (dots $\times$ lines)	Horizontal Frequency	Vertical Frequency	Graphics Mode
1	640×480	31.5 kHz	60 Hz	VGA-G
2	640×480	37.5 kHz	75 Hz	VESA
3	640×480	43.3 kHz	85 Hz	VESA
4	800×600	46.9 kHz	75 Hz	VESA
5	800×600	53.7 kHz	85 Hz	VESA
6	1024×768	60.0 kHz	75 Hz	VESA
7	1024×768	68.7 kHz	85 Hz	VESA
8	1280×1024	80.0 kHz	75 Hz	VESA
9	1280×1024	91.1 kHz	85 Hz	VESA
10	1600×1200	93.8 kHz	75 Hz	VESA

**If the input signal does not match one of the factory preset modes above, the Generalized Timing Formula feature of this monitor will automatically provide an optimal image for the screen as long as the signal is GTF compliant.

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Service Information

The following parts are for use by IBM service, or IBM authorized dealers, to support customer warranty. Parts are for service use only.

Monitor Information

Part No.	M/T-Model	Description
22P6359	6639-T3N	P77 Monitor - NH (Pearl White), Japan
22P6360	6639-U3N	P77 Monitor - NH (Stealth Black), Japan
22P6361	6639-T3N	P77 Monitor - NH (Pearl White)
22P6362	6639-U3N	P77 Monitor - NH (Stealth Black)
22P6363	6639-T3S	P77 Monitor - SH (Pearl White)
22P6364	6639-U3S	P77 Monitor - SH (Stealth Black)